

ABSTRACT OF THE DISCLOSURE

A plasma chamber enclosure structure for use in an RF
5 plasma reactor. The plasma chamber enclosure structure
being a single-wall dielectric enclosure structure of an
inverted cup-shape configuration and having ceiling with an
interior surface of substantially flat conical configuration
extending to a centrally located gas inlet. The plasma
10 chamber enclosure structure having a sidewall with a lower
cylindrical portion generally transverse to a pedestal when
positioned over a reactor base, and a transitional portion
between the lower cylindrical portion and the ceiling. The
transitional portion extends inwardly from the lower
15 cylindrical portion and includes a radius of curvature. The
structure being adapted to cover the base to comprise the RF
plasma reactor and to define a plasma-processing volume over
the pedestal. The structure being formed of a dielectric
material of silicon, silicon carbide, quartz, and/or alumina
20 being capable of transmitting inductive power therethrough
from an adjacent antenna.